

# Receiving Report

Date: 5-04-22

Batch No: 132107

Supplier: KLX inc

Dart P/O: 28189

Packing Slip: Yes ☒ No ☐  
 Invoice: Yes ☒ No ☐  
 Receipt: Cash ☐ Cr ☒  
 New Supplier Yes ☐ No ☒

Release Note Attached: Yes ☐ No ☐ N/A ☐  
 Waybill Attached: Yes ☐ No ☐  
 Shipment Complete: Yes ☐ No ☐ N/A ☐  
 QC18 Inspection ☐ N/A ☐  
 Work Order ☐ N/A ☐

## Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver QC12

Production/Admin:  
 Date \_\_\_\_\_  
 Received/Costing \_\_\_\_\_  
 Initial \_\_\_\_\_

Location \_\_\_\_\_



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO28189**

Purchase Order Date 4/21/2015

PO Print Date 4/21/2015

Page Number 1 of 4

### Order From :

KLX INC.  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

### Order From :

KLX INC.  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

VU-KLX01

### Ship To :

DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

### ORDER NO

PO281

### ITEM NO.

1

### Contact Name

Vendor Phone 305

### Ship To Contact

Ship To Phone  
Ship Via: Fed  
Ship Acct:

### Contact Name

Vendor Phone 305-925-2600

### Ship To Contact

Ship To Phone  
Ship Via: FedEx Overnight collect  
Ship Acct:

### Buyer

Chantal Lavoie

### Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB Destination-Collect

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	Line Comments		Promise Date				
	Delivery Comments						
2	4 M7885/2-4-1						
1	AN6H13A	Bolt	4/22/2015 Yes 4/22/2015		10.00 ✓ Each	\$1.60	\$16.00 ✓
						<b>Line Total:</b>	<b>\$16.00</b>
3	5 MS20600AD4W4						
2	CR3212-4-05	CHERRY RIVET	4/22/2015 Yes 4/22/2015		100.00 ✓ Each	\$0.39	\$39.00 ✓
						<b>Line Total:</b>	<b>\$39.00</b>
4	6 MS20601-AD4W8						
3	CR3213-5-03	Cherry Rivet	4/22/2015 Yes 4/22/2015		100.00 ✓ Each	\$0.42	\$42.00 ✓

### SHIPPER

MATERIAL  
WORKMAN  
REQUIREMENT  
WARRANTY  
BECAUSE  
SOLUTION  
AFTER REG

Note:

Note:

4/21/2015

SP 15-04-22



Tel: +1.305.925.2600 • Fax: +1.305.507.7191 • www.KLXaerospace.com

Remit to Address: 88289 Expedite Way, Chicago, IL 60695-0001

Wire Instructions: KLX Inc. • JPMorgan Chase Bank New York

ABA: 021000021 • Account: 304639273 • SWIFT: CHASUS33 • CHIP UID: 0002



CONSOLIDATION

1BE9HM

PAGE 1



SEND TO ACCOUNTING

SOLD TO:

002409

DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY, ON  
CANADA K6A 1K7

SHIP TO:

DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY, ON  
CANADA K6A 1K7

ORDER NO. See Below		DATE 04/21/2015	SHIP VIA FEDX INTL P1 COLL		TERMS NET 45		SHIPPING TERMS FOB-MIAMI	
ITEM NO.	QUANTITY ORDERED	PART NUMBER AND DESCRIPTION		PRICE	UNIT	BACK ORDER	SHIPPED	AMOUNT
1 2  fsa		INVOICE# CUST P/O						
		FED. TAX# 47-163-9172						
		HZE5RA	PO28189					
		HZE5RB	PO28189					
		***CONSOLIDATION SUMMARY PAGE ONLY						
SHIPPED ON 04/21/2015								
MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY KLX INC.								

ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE.

### PACKING SLIP

BY RECEIVING DELIVERY OF THE ITEMS COVERED BY THIS PACKING SLIP, BUYER AGREES TO THE TERMS AND CONDITIONS OF SALE AT:  
<http://www.KLXaerospace.com/conditions-sale/>



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCP  
www.KLXAerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
8	8	EA	20024S	QS100-M24S	0407	BREEZE CLAMPS	72588		

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15

**THIS MEMORANDUM**

IS AN ACKNOWLEDGEMENT THAT A BILL OF LADING HAS BEEN ISSUED AND IS NOT THE ORIGINAL BILL OF LADING. NOR A COPY OR DUPLICATE. COVERING THE PROPERTY NAMED HEREIN, AND IS INTENDED FOR ONE YEAR FILING OR RECORD.

VENNOR \$:

SID#: 391737

NAME OF CARRIER

CARRIER NUMBER

RECEIVED, SUBJECT TO THE CLASSIFICATIONS AND LAWFULLY FILED TARIFFS IN EFFECT ON THE DATE OF THE RECEIPT BY THE CARRIER OF THE PROPERTY DESCRIBED IN THE ORIGINAL BILL OF LADING

AT: SALTSBURG, INDIANA CO., PA

20

FROM: BREEZE INDUSTRIAL PRODUCTS CORPORATION

**SOLD TO**

CONSIGNEE TO  
MAIL OR STREET ADDRESS FOR PURPOSE OF NOTIFICATION ONLY

M & M AEROSPACE HARDWARE INC  
10000 N.W. 15TH TERRACE

MIAMI, FL

33172-0000

SEE BELOW

CUSTOMER  
ORDER NO.

**COLLECT ON DELIVERY**

AND  
REMIT  
TO:

THIS IS TO CERTIFY THAT THE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

TO:						DEPARTMENT OF TRANSPORT.
DATE ENTERED	FGT.	TERR.	CUSTOMER NO.	OUR ORDER NO.	VIA	07703420294
2/20/2007	Y	0206	02755001	SEE BELOW		OLD DOMINION

QTY. ORDERED	ITEM NO.	DESCRIPTION	BREEZE #	QTY. SHIPPED	BALANCE ON ORD.
8500	1	200 24 S 20024S PO:0AV343	211132	8500	

NO. PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, EXCEPTIONS	WEIGHT (SUB. TO COR.)	CLASS OR RATE	CK. COL.	AGENCY	COMMENTS
1	PALLETS OF 17 CARTONS	623 LBS .00			44	ROSE CLAMPS
					PER	

BREEZE INDUSTRIAL PRODUCTS CORPORATION SHIPPER, PER

2007-04-10-16.34.54.524000

PERMANENT POST OFFICE ADDRESS OF SHIPPER: 3582 THINNETT ROAD SAITSBURG PA 15681-0594



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMICR  
www.KLXAerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	200	EA	MS20601AD4W8		86844202	CHERRY AEROSPACE SAN	11815		

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: S0301082 Page: 1  
Order Date: 12/18/06  
Print Date: 07/12/07



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	M&M AEROSPACE HARDWARE PO BOX 025263 MIAMI, FL 33102-5263 USA
----------------------------	--

S H I P T O	M&M AEROSPACE HARDWARE 10000 N.W. 15TH TERRACE MIAMI, FL 33172 USA
----------------------------	---

Salesperson (s): 110

Purchase Order: 0AS898

Credit Terms: 1%10, 30  
1%10, Net 30

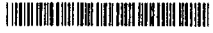
Ship Via: Watkins  
FOB: Origin

### Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
IF OVER 150# SHIP WATKINS MOTOR LINE ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114  
\*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
\*\*\*\*\*

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
1	CR9162-4-08 Customer Item: MS20601AD4W8 	1600 J0503 86844202	13000.0	EA	06/07/07 ( )



**TEST REPORTS  
ENCLOSED DO  
NOT DESTROY**

Packing List



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST



Order No: S0301082      Page: 1  
Order Date: 12/18/06  
Print Date: 07/12/07



Sold-To: 10015341

Ship-To: 19000244

**SOLD TO**  
M&M AEROSPACE HARDWARE  
PO BOX 025263  
MIAMI, FL 33102-5263  
USA

**SHIP TO**  
M&M AEROSPACE HARDWARE  
10000 N.W. 15TH TERRACE  
MIAMI, FL 33172  
USA

Salesperson (s): 110

Purchase Order: 0AS898

Credit Terms: 1%10, 30  
1%10, Net 30

Ship Via: Watkins  
FOB: Origin

## Remarks:

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\*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
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Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
1	CR9162-4-08	1600			EA	06/07/07
	Customer Item: MS20601AD4W8					
		J0503	86844202	13000.0		( )

REPORTS  
ENCLOSED DO  
NOT DESTROY

## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

*Sim Nguyen*

SIM NGUYEN





P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXAerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	10	EA	AN6H13A		58713	MAC FASTENERS	0RPT4		

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OBJR08

PART NUMBER: AN6H13A

REV: 2

LOT NUMBER: 58713

MANUFACTURED QUANTITY: 1,000

MILL HEAT NUMBER: 8076628

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225-7014, ALTERNATE 1 COMPLIANT

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured  
by MAC FASTENERS, INC. within the United States, and were processed in accordance with all  
applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 10/19/11

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100/ISO9001 Registered Company - PJR# C2009-00297

MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067

## CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER OBJR08	MFG QUANTITY 1,000	DATE 10/19/11
PART NUMBER AN6H13A	REV 2	LOT NO 58713	PROCUREMENT SPEC NASM6812

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 8740				MIL-S-6049/AMS6322				8076628			JOHNSTOWN		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.41	.25	.85	.007	.009	.09	.43	.49	.21	.002			.033	
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
		.0068							.005				

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
13,000
12,980
13,040
13,060
13,040
MIN. REQ. 10100

DOUBLE SHEAR STRENGTH POUNDS / PSI
17,500
17,400
17,600
17,500
17,400
MIN. REQ. 16560

HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 26-28 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

AS9100, ISO9001 REGISTERED  
PJR #C2009-00297



**Johnstown  
Wire  
Technologies**

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
**805016**

**TEST REPORT**  
LOT NUMBER  
**K-8076628**  
SALES ORDER / RLS  
**995305 / 2**

SOLD TO

**Mac Fasteners, Inc.**  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



CUSTOMER P.O. <b>50516</b>	CUSTOMER PART	QUANTITY <b>18,208 LBS</b>	COILS <b>8</b>	LADING NO <b>00104716</b>	SHIPMENT DATE <b>06/15/2011</b>							
SPECIFICATION <b>Macfast-87371</b> <b>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation</b> <b>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod</b> <b>Spheroidize Annealed In Process Heavy Phos &amp; Light Lube Ctd</b> <b>Size: .371 +.001 -.000</b>												
CERTIFICATION REQUIREMENTS												
Chemical												
C .41	Mn .85	P .007	S .009	Si .25	Al .033	Ni .43	Cr .49	Mo .21	Cu .09	V .002		
Cb .000	Ti ???????	N .0068	Sn .005									
Physical												
AMS 2301 0000	J1 58	J10 39	J11 37	J12 35	J2 57	J3 56	J5 54	J4 56	J6 53	J7 49	J8 45	J9 42
MacroClean E-381 111												
Mechanical												
TEST	UNITS	HIGH	LOW	AVERAGE								
Tensile Str	Lbs/SqIn	82000	79000	80000								
RA Per Cent	Percent	73.3	69.0	70.5								
Decarb FFD	Inches	.000	.000	.000								
Surface def. depth	Inches	.000	.000	.000								
Rod / Melt Source												
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes									
End of Certification												

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*D. L. Deetscreek*  
**D. L. Deetscreek**  
Director of Quality Assurance

Date Printed 06/15/2011



# Republic

ENGINEERED PRODUCTS

1807 EAST 28TH ST.  
PHONE: 330-438-5694

LORAIN, OH 44055  
FAX: 330-438-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

March 27, 2011  
PAGE 1

OF 2

-----  
PURCHASE ORD: 32734  
PART NUMBER: FXT40AA .313  
ORDER NUMBER: 1470795 - 01  
HEAT: 8076628  
----- CHARGE ADDRESS -----  
PURCHASE ORDER DATE: 12/8/2010  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 0897-90  
REVISION: 1  
----- SHIP TO -----

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
C/O C & BL RAILROAD  
TRACK 629  
JOHNSTOWN, PA 15901

----- MATERIAL DESCRIPTION -----

HOT ROLLED STEEL COILS ALLOY AMS 2301X JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &  
UPP WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGAUSS AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
SIZE: RDS .3130 DIAM X COIL  
RDS 7.9502MM DIAM X COIL

----- LABILE CHEMISTRY -----

C	MN	P	S	SI	CU	NI	CR
0.41	0.05	0.007	0.009	0.25	0.09	0.43	0.49
V	MO	SN	AL	B	CB	N	
0.002	0.21	0.005	0.033	0.0000	0.060	0.0060	

----- CALCULATED TESTS -----

REDUCTION RATIO 1,690.4 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER  
ASTM A29.

----- SEMI-FINISHED RESULTS -----

JOMINY HARDNESS TEST SAE J406/ASTM A255  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
50 57 56 56 54 53 49 45 42 39 37 35 34 33 32 31 31 30 29 28 28 28 28 27

MACRO ETCH TEST ASTM E381/MIL STD 430  
ETCHANT: HCL TEMPERATURE: 170  
S R C  
AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  
IND AVG IND AVG  
FREQ FREQ SEV SEV  
PCE 03 0 0 0 0

----- FINISHED SIZE RESULTS -----

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 3456	0.003	0	0.002

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE



**Republic**  
ENGINEERED PRODUCTS

1807 EAST 28TH ST.  
PHONE: 330-430-5694

LORAIN, OH 44055  
FAX: 330-430-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

March 27, 2011  
PAGE 2

OF 2

PURCHASE ORD: 32734  
PART NUMBER: FXT40AA-.313  
ORDER NUMBER: 1470795 - 01  
HEAT: 0076628

PURCHASE ORDER DATE: 12/8/2010  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 0897-90  
REVISION: 1

CAPABLE OF SEAM DEPTH 1x MAX DIAMETER NOT LESS THAN .005 MAX

NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC ENGINEERED PRODUCTS HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND

NOTES (CONTINUED)

TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED

SOURCE INFORMATION

~~MELT SOURCE: CANTON-CAST-ROLL~~ ~~MELT COUNTRY: U.S.A~~ ~~HOT ROLL SOURCE: LORAIN 9/10, U.S.A~~

MELT METHOD: EF BLOOM RED. RATIO: 1690.4

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA

FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA

1-814-532-5684

FILE 1 COPY

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE

*M T Kruth*

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 10/19/11

PO NUMBER: OBJR08

MANUFACTURED QUANTITY: 1,000

LOT NUMBER: 58713

MATERIAL: TYPE 8740

PART NUMBER: AN6H13A

REVISION: 2

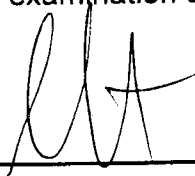
REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 26-28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

October 14, 2011

Mac Fasteners  
1110 Enterprise Street  
Ottawa, Kansas 66067

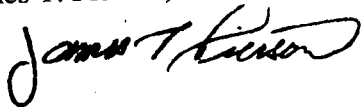
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice #156164 dated 10/14/2011 for:

Lot#- 58713

P.N.- AN6H13A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS





P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
5	200	EA	MS20600AD4W4		88019495	CHERRY AEROSPACE SAN 11815			

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15



**CHERRY®**  
**AEROSPACE**  
 SPS Fastener Division, a PCC Company

Cherry Aerospace  
 1224 East Warner Avenue  
 Post Office Box 2157  
 Santa Ana, CA 92707-0157  
 USA



# PACKING LIST

Order No: SO382389  
 Order Date: 03/12/14  
 Print Date: 02/12/15

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	KLX INC
	10000 NW 15TH TERRACE
	MIAMI, FL 33172
	USA

S H I P T O	KLX AEROSPACE SOLUTIONS
	KLX INC.
	9835 NW 14TH ST
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0WWT96

Credit Terms: NET 30  
 Net 30

Ship Via: FED EX NATIONAL CL  
 FOB: Origin - Collect

## Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
 IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
 DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
 DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
 BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
 AIRBUS APPROVAL# 30114  
 \*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
 \*\*\*\*\*

ECCN: EAR99  
 \*\*\*\*\*

\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
 \*PREFERENCE FOR DOMESTIC SPECIALTY METALS  
 \*\*\*\*\*

RELEASE# VIO3OWWT96  
 \*\*\*\*\*

Unless otherwise specified on this order, Cherry will manufacture and  
 certify parts to the part number's latest revision. Latest revisions are  
 shown at <https://bizpartner.cherryaerospace.com/partrevisions.htm> under  
 "Part Number Revision List".  
 \*\*\*\*\*

INCORRECT AND UNAVAILABLE PART NUMBERS WILL BE LINED OUT ON PO  
 CHERRY AEROSPACE DOES NOT ACCEPT CLAUSE V IN REGARDS TO ISO17025- CHERRY  
 IS COMPLIANT TO NADCAP REQUIREMENTS ONLY

**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY...**

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship UM	Promised Shipped
2	CR9163-4-04	1600	EA	03/06/15

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



**CHERRY®**  
**AEROSPACE**

SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: S0382389  
Order Date: 03/12/14  
Print Date: 02/12/15

Page: 2

Sold-To: 10015341


Ship-To: 10043053

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KLX INC  
10000 NW 15TH TERRACE  
MIAMI, FL 33172  
USA

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KLX AEROSPACE SOLUTIONS  
KLX INC.  
9835 NW 14TH ST  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR9163-4-04 Customer Item: MS20600AD4W4 	G0503 88019495	17500.0		( )

**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY**

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Packing List



**CHERRY®**  
**AEROSPACE**

SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST

Order No: SO382389  
Order Date: 03/12/14  
Print Date: 02/12/15

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	KLX INC
	10000 NW 15TH TERRACE
	MIAMI, FL 33172
	USA

S H I P T O	KLX AEROSPACE SOLUTIONS
	KLX INC.
	9835 NW 14TH ST
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0WWT96

Credit Terms: NET 30  
Net 30

Ship Via: FED EX NATIONAL CL  
FOB: Origin - Collect

## Remarks:

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IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

ECCN: EAR99

\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
\*PREFERENCE FOR DOMESTIC SPECIALTY METALS

RELEASE# VIO3OWWT96

Unless otherwise specified on this order, Cherry will manufacture and certify parts to the part number's latest revision. Latest revisions are shown at <https://bizpartner.cherryaerospace.com/partrevisions.htm> under "Part Number Revision List".

INCORRECT AND UNAVAILABLE PART NUMBERS WILL BE LINED OUT ON PO  
CHERRY AEROSPACE DOES NOT ACCEPT CLAUSE V IN REGARDS TO ISO17025- CHERRY  
IS COMPLIANT TO NADCAP REQUIREMENTS ONLY

**TEST REPORTS ENCLOSED**

**DO NOT DESTROY...**

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR9163-4-04	1600			EA	03/06/15

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

## Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed

SIM NGUYEN



**CHERRY®**  
**AEROSPACE**

SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: S0382389  
Order Date: 03/12/14  
Print Date: 02/12/15

Page: 2

Sold-To: 10015341

Ship-To: 10043053

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KLX INC  
10000 NW 15TH TERRACE  
MIAMI, FL 33172  
USA

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KLX AEROSPACE SOLUTIONS  
KLX INC.  
9835 NW 14TH ST  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR9163-4-04 Customer Item: MS20600AD4W4 	G0503 88019495	17500.0	( )	

**TEST REPORTS ENCLOSED**  
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Signed  
**SIM NGUYEN**

**CHERRY<sup>®</sup> AEROSPACE**

SPS Fastener Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157

Accredited

Nadcap

Chemical Processing

Heat Treating

ISO/IEC 17025

Material Testing Lab

**Final Inspection & Test Report**  
**Cherry<sup>®</sup> Rivet****An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	<b>Lot I.D. No.: 88019495</b>  <b>Lot Size: 19,000</b>  <b>MFG. Date: February 09, 2015</b>
CR9163-4-04	K	MIL-R-7885	D2	
<b>** See 2nd Page for the Customer Parts</b>				

**ASSEMBLY DATA**

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	88019495	A75148	2117 ALUM ALLOY	MIL-C-5541	Par-90
Stem	88019496	A74944	2017 ALUM ALLOY	MIL-C-5541	Par-90

W.O. #: 5563288

Final Lube: None

**QUALITY CONFORMANCE/ACCEPTANCE RESULTS**

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	370		15	
	9		9	
RESULTS	493	503	44	50
	498		42	
	491		42	
	499		41	
	493		52	
	500		48	
	506		46	
LOAD VALUES IN POUNDS	487		56	

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	13	INSTALLATION (Min and Max Grips)	PASS

**Comments:**

Blind Fastener

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

Tr. Rev.:  
Rev. Date: 2/9/2015Inspector  
V Iriarte

Insp. Control #:

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

# BENEKE

## Product Certification And Testing Report

Customer:

CHERRY AEROSPACE LLC  
ATTN: ACCTS. PAYABLE  
1224 EAST WARNER AVENUE  
P.O. BOX 2157

SANTA ANA

CA 92707-0157

Date >> 5/22/2014

Customer PO No.	BWC Lot No.	Date Shipped
PO165732	26142	5/22/2014
Cust Item ID : M051-0980		

BWC Item No.  
2F09808T3741A01

Description:

.098" DIA. + - .0005" 4F 2017 - T37  
#4 FINISH, ALUMINUM COLD HEADING WIRE X 22"  
BLOCKWOUND 100# COILS.

Specifications:

CUST SPEC M-51 REV. L  
FED SPEC QQ-A-430 REV. C

### Chemical Limits

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total	Aluminum Remainder	Case No.	lbs
2017	.20 - .8	-.7	3.5 - 4.5	.40 - 1.0	.40 - .8	-.10	-.25	-.15	.05	.15			
852901	.28	.17	3.9	.47	.49	.00	.01	.01					

### Test Results

Diameter (in)	Tensile (psi)	Yield (psi)	Peak Load (lbs)	Grain Size
0.0982	67,440.0		510.8	
0.0982	69,380.0		525.5	

Total Weight: 551

JUN - 2 2014



### Beneke Wire Company

WE CERTIFY THAT SAMPLES REPRESENTING THE MATERIAL COVERED IN THIS REPORT HAVE BEEN INSPECTED AND FOUND TO MEET THE COMPOSITION LIMITS AND MECHANICAL PROPERTIES SHOWN ABOVE. ANY WARRANTY IS LIMITED TO THAT SHOWN ON BENEKE WIRE COMPANY'S STANDARD TERMS AND CONDITIONS OF SALE.

5540 National Turnpike

Louisville, KY 40214

Authorized  
Signature

*Shannon King*

Shannon King, Plant Metallurgist

Phone: (502) 367-6434

Beneke Wire Company  
852901



A74944

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

*Best in Class*

## **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

### **Miscellaneous Notes**

Made in USA

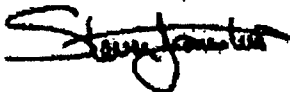
Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-11. The Newark facility is AS9100C:2009 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

The products you inquired and ordered are not governed by any applicable industry standard or custom specifications. They are produced, tested and released as such. By placing an order, you acknowledge and accept the full responsibility and liability for their fitness for the intended end use or end uses.

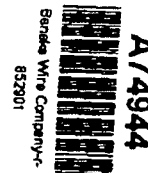
### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLP ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Steven J. Tua, Technical Manager



JUN - 2 2014



Plant Serial: 35884  
Kaiser Order Number: 172563482  
Line Item: 1





## Product Certification And Testing Report

Customer:

CHERRY AEROSPACE LLC  
ATTN: ACCTS. PAYABLE  
1224 EAST WARNER AVENUE  
P.O. BOX 2157

SANTA ANA

CA 92707-0157

Date >> 7/7/2014

Customer PO No.	BWC Lot No.:	Date Shipped:
PO167334	26389	7/7/2014
Cust Item ID : M262.1230		

BWC Item No.  
2H1230813041A01

Description:

.123" DIA. +- .0005" 4F 2117 - H13  
#4 FINISH, ALUMINUM COLD HEADING WIRE X 22"  
BLOCKWOUND 100# COILS.

Specifications:

CUST SPEC M-262 REV. F  
FED SPEC QQ-A-430 REV. C

### Chemical Limits

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total	Aluminum Remainder	Case No.	lbs	Diameter (in)	Tensile (psi)	Yield (psi)	Peak Load (lbs)	EL %	Grain Size
2117	.8	.7	2.2-3.0	.20	.20-.50	.10	-.25		.05	.15									
851963	.39	.40	2.8	.14	.40	.06	.11												
42647-1													230	0.1230	29,740.0		353.4		

Total Weight: .230

### Test Results

A75148



Beneke Wire Company  
851963



JUL 16 2014

### Beneke Wire Company

WE CERTIFY THAT SAMPLES REPRESENTING THE MATERIAL COVERED IN THIS REPORT HAVE BEEN INSPECTED AND FOUND TO MEET THE COMPOSITION LIMITS AND MECHANICAL PROPERTIES SHOWN ABOVE. ANY WARRANTY IS LIMITED TO THAT SHOWN ON BENEKE WIRE COMPANY'S STANDARD TERMS AND CONDITIONS OF SALE.

Authorized  
Signature

Shannon King, Plant Metallurgist

Phone: (502) 367-6434

5540 National Turnpike

Louisville, KY 40214

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

### Miscellaneous Notes

Made in USA


Chemical exceptions Fe 0.30-0.7 Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-11. The Newark facility is AS9100C:2009 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

The products you inquired and ordered are not governed by any applicable industry standard or custom specifications. They are produced, tested and released as such. By placing an order, you acknowledge and accept the full responsibility and liability for their fitness for the intended end use or end uses.

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLP ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Steven J. Tua, Technical Manager



JUL 16 2014



A75148

Plant Serial: 33279

Kaiser Order Number: 172555318

Line Item: 1

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:	
				ALY-JUMBO	
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	TEMPER:	
172555318	1	10/25/2013	2117		
WEIGHT SHIPPED:	QUANTITY:	BA NUMBER:	DIAM/DIA/THICKS:	WIDTH:	LENGTH:
6241 lbs.	23 pcs.	8273		0.000 in.	0.0 in.
SHIP TO:			SOLD TO:		
BENEKE WIRE COMPANY 5540 NATIONAL TURNPIKE LOUISVILLE, KY 40214			BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214		

Test Code: 8000

### Actual Physical Properties

Lot No.	No. Tests	WGU
		kai
851963	1	MIN 22.1 MAX 22.1

### Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cr	Zn
851963									
78-5F2	Act.		0.39	0.40	2.8	0.14	0.40	0.06	0.11
184508									
Chemical	Min				2.2		0.20		
Limits	Max		0.8	0.7	3.0	0.20	0.50	0.10	0.25
		Others	Each	0.05	Max		Total	0.15	Max

JUL 16 2014



Plant Serial: 33279  
Kaiser Order Number: 172555318  
Line Item: 1

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:	
				ALY-JUMBO	
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	TEMPER:	
172563482	1	04/14/2014	KN17		
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:
7610 lbs.	33 pcs.	9617		0.000 in.	0.0 in.
SHIP TO:			SOLD TO:		
BENEKE WIRE COMPANY 5540 NATIONAL TURNPIKE LOUISVILLE, KY 40214			BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214		

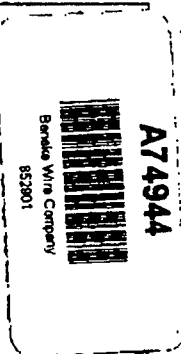
Test Code: 2415

### Actual Physical Properties

Lot No.	No. Tests		WGE %	WGU ksi	WGY ksi
852901	2	MIN	30.7	24.8	12.5
		MAX	33.3	25.0	12.5

### Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr
852901											
9-2F2	Act.		0.28	0.17	3.9	0.47	0.49	0.00	0.01	0.01	0.00
189431											
Chemical	Min		0.20	0.15	3.5	0.40	0.40				
Limits	Max		0.40	0.30	3.90	0.60	0.60	0.04	0.03	0.15	0.05
		Others	Each	0.05	Max			Total	0.15	Max	



JUN - 2 2014



Plant Serial: 35884  
Kaiser Order Number: 172563482  
Line Item: 1



**CHERRY AEROSPACE**  
SPS Aerospace Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157



Accredited

**Nadcap**  
Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

## Final Inspection & Test Report Cherry® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: 88019495

Rev: -

### Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20600AD4W4	2	MIL-R-7885	D2



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMOR  
www.KLXAerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
3	100	EA	CR3213-5-03		87499746	CHERRY AEROSPACE SAN	11815		

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15



**CHERRY®  
AEROSPACE**

SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST

Order No: S0322180  
Order Date: 05/05/08  
Print Date: 06/30/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0EZ771

Credit Terms: Net 30  
Net 30

Ship Via: FEDEX NATIONAL  
FOB: Origin - Collect

## Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114

\*\*\*\*\*  
GOODS OF UNITED STATES ORIGIN

**TEST REPORTS ENCLOSED**

**DO NOT DESTROY**

\*\*\*\*\*  
FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010  
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095  
ISSUE RMA# 4286 TO RETURN INCORRECT PARTS SHIPPED ON 9/6/2008. ADDED  
REPLACEMENT TO NEXT SHIPPING DATE ITEM 3

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
7	CR3213-5-03 Customer Item: NAS9301BNS-5-03 M7885/2-5-03 NAS9301B-5-03 S2906-5-3 * IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I * PREFERENCE FOR DOMESTIC SPECIALTY METALS	1600			EA	12/15/11
			C0204 87499747	30923.0		( )
			E0904 87495767	5990.0		( )
			EZ LINE 87495774	34792.0		( )

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed

SIM NGUYEN



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST

Order No: S0322180  
Order Date: 05/05/08  
Print Date: 06/30/11

Page: 2



Sold-To: 10015341

Ship-To: 19000244

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B/E AEROSPACE  
PO BOX 025263  
MIAMI, FL 33102-5263  
USA

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B/E AEROSPACE INC C.M.  
10000 N.W. 15TH TERRACE  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
7					
		EZLINE-2 87495973	22710.0	( )	
		EZLINE-2 87499746	31112.0	( )	
		EZLINE-3 87491258	33600.0	( )	
		EZLINE-3 87495770	34933.0	( )	
		EZLINE-3 87498784	18800.0	( )	
		F0304 87498815	8170.0	( )	
		I0202 87465445	23893.0	( )	
		I0304 87474792	5018.0	( )	
8	CR3213-5-03	1600		EA	12/15/11
	Customer Item: NAS9301BNS-5-03				
	M7885/2-5-03				
	NAS9301B-5-03				
	S2906-5-3				
	* IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I				
	* PREFERENCE FOR DOMESTIC SPECIALTY METALS				
	EZ LINE 87489605		140.0	( )	
	EZLINE-2 87492946		26332.0	( )	
	EZLINE-2 87497118		34424.0	( )	
	EZLINE-2 87503277		34084.0	( )	
	EZLINE-3 87497120		34552.0	( )	

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Quality Assurance Representative

Signed

SIM NGUYEN





**CHERRY<sup>®</sup>**  
**AEROSPACE**

SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: SO322180  
Order Date: 05/05/08  
Print Date: 06/30/11

Page: 3

Sold-To: 10015341

Ship-To: 19000244

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B/E AEROSPACE  
PO BOX 025263  
MIAMI, FL 33102-5263  
USA

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B/E AEROSPACE INC C.M.  
10000 N.W. 15TH TERRACE  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
8	1 000000 0000 0000 0000 0000 0000 0000 0000 0000	EZLINE-3 87497229	28589.0	( )	
	1 000000 0000 0000 0000 0000 0000 0000 0000 0000	EZLINE-3 87498783	34671.0	( )	
	1 000000 0000 0000 0000 0000 0000 0000 0000 0000	EZLINE-3 87502012	32109.0	( )	
	1 000000 0000 0000 0000 0000 0000 0000 0000 0000	F0304 87498815	25100.0	( )	



**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY**

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

#### CERTIFICATION

#### ATTENTION: PURCHASING DEPARTMENT

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Quality Assurance Representative

Signed

SIM NGUYEN



**CHERRY AEROSPACE**  
SPS fastener Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157



Accredited  
**Nadcap**

Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

## Final Inspection & Test Report CherryMax® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Part Numbers	Rev	Proc. Spec.	Rev	<b>Lot I.D. No.:</b> 87499746  <b>Lot Size:</b> 31,120 ✓  <b>MFG. Date:</b> June 05, 2011
CR3213PR-5-03	AA	PS-CMR-3000	R	
CR3213-5-03	AA	PS-CMR-3000	R	
** See 2nd Page for the Customer Parts				

### ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87488002	A66146	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87487990	A66565	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A67157	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 5438355

Final Lube: None

### QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION			DISASSEMBLY
	840		445		200			10
	8	N/A	8	N/A	5	8	N/A	5
	C-N-M	B	C-N-M	B	C-N-M	M	B	C-N-M
RESULTS	1417		566		493	406		37
	1374		545		439	431		97
	1357		536		473	417		44
	1335		607		488	418		36
	1402		565		473	398		23
	1349		566			433		
	1378		573			424		
	1399		570			398		

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	20	INSTALLATION (Min and Max Grips)	PASS

#### Comments:

Blind Fastener

Tr. Rev: 1  
Rev. Date: 6/30/2011

Inspector  
**S Nguyen**

Q Code  
**V09**



The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

# KAISER ALUMINUM

**SOLD TO:**  
**CHERRY AEROSPACE LLC**  
**VMI / CONSIGNMENT AGREEMENT**  
**1224 EAST WARNER AVE**  
**SANTA ANA, CA 92705-5414**

CHEM CCMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	5056		0.30		0.40		0.10	0.05	0.20	4.50	5.60	0.05	0.20	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.10										
ALUMINUM REMAINDER															

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

## **Specifications**

QQA-430 REV C

## **Miscellaneous Notes**

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).



01/07/11

Kaiser Aluminum Fabricated  
K845056



A66146

## **CERTIFICATION**

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

Plant Serial: 12466

Kaiser Order Number: 624525323

Line Item: 1



**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

**CHERRY AEROSPACE LLC**  
1224 E. WARNER AVENUE  
SANTA ANA, CA 92705-5414  
USA

WORK ORDER  
**081248**

**CERTIFICATION**

HEAT NO.  
10048690  
SALES ORDER / RLS  
**838224 / 1**  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CUSTOMER P.O. <b>VPO092778</b>	CUSTOMER PART <b>M272.1145</b>	QUANTITY <b>4,009 Lbs</b>	CARRIERS <b>4</b>	LADING NO <b>00088449</b>	SHIPMENT DATE <b>02/22/2011</b>			
<b>SPECIFICATION C208740-101145A</b> <b>A-8740, AQ, SKFG, CHQ WIRE, SEAM &amp; DECARB FREE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating,</b> <b>Size:0.1135/0.1155 Specifications: AMS2301J, AMS6322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A,</b> <b>M 272.1145 REV. P.</b>								
<b>CERTIFICATION REQUIREMENTS</b>								
<b>Chemical Properties</b>								
C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.41	.24	.94	.008	.008	.12	.44	.44	.22
<b>Physical Properties</b>								
Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source	
6 J5=53	J8=46	J10=42	S2-R1-C2	GOOD	F&S=0	Charter		
Country of Origin						MAR 25 2011		
USA - DFAR Compliant								
<b>Mechanical Properties</b>								
<b>TEST</b>	<b>UNITS</b>					<b>Results</b>		
Tensile Strength	KSI					131.9		
Yield Strength	KSI					112.1		
% Elongation	%					8.5		
% Reduction of Area	%					58.9		
Rockwell Hardness C Scale	HRC					28		
Decarb (Total)	In					0.00		
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED</p> <p>"LATEST REVISIONS OF ASTM"</p>								
Material is free of mercury, radium, or alpha contamination.								



A66565

*[Signature]*

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSSM, CSCM/CSCR	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSCM/CSCR	ASTM E572
Macroetch	CSSM, CSCM/CSCR	ASTM E381
Hardenability (Jominy)	CSSM, CSCM/CSCR	ASTM A255; SAE J406; JIS G0561
Grain Size	CSSM	ASTM E112
Tensile Test	CSSR/CSSP, CSFP, CSCM/CSCR	ASTM E8; ASTM A370
Rockwell Hardness	All labs	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSSR/CSSP, CSFP	ASTM A892
Inclusion Content (Methods A, E)	CSSR/CSSP, CSCM/CSCR	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/11.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



A66565

MAR 25 2011



# Certificate of Analysis

Radcliff Wire Inc. 97 Ronzo Rd., P.O. Box 603, Bristol, CT 06010

Date Shipped: 5/12/2011

PO #: VP125694

Qty. Shipped: 196 LBS-13 BLACK  
MIG SPOOLS

Radcliff No.: 121251

Heat No.: Z2664MK14

Customer: CHERRY AEROSPACE  
SANTA ANA OPERATIONS  
1224 EAST WARNER AVE  
SANTA ANA, CA 92705-5414

Country of Origin: USA

Original Mill Source: USA

Size: .0075 X .014 X .081 \*\*\*

Material: A286 Stainless Steel

Description: SPECIAL SHAPE

Specification: AMS 5737 REV P, AMS 5731 REV L  
CHEM ONLY

## Chemical Properties

Al: 0.17%	B: 0.007%	Bi: 0.0001%	C: 0.04%	Co: 0.08%
Cr: 14.57%	Cu: 0.19%	Fe: 56.26%	Mn: 0.16%	Mo: 1.29%
Ni: 24.69%	Pb: 0.0002%	S: 0.002%	Si: 0.18%	Ti: 2.05%
V: 0.3%				

## Notes:

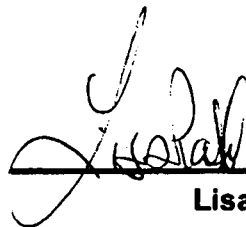
PART# M189.05 REV W  
NET WGT 196 LBS  
DFAR COMPLIANT

MAY 26 2011

Tensile: 102 KSI

Rockwell:

Certs/Material



**Lisa Platek**

Certification Clerk

The material as shipped is free from mercury contamination



**HUNTINGTON ALLOYS CORPORATION**  
**A Special Metals Company**

HUNTINGTON, WEST VIRGINIA 25705-1771

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE.

OTHER DIRECT-NOT ASSIGNABLE TO DI

<b>A-1 WIRE TECH</b> <b>840 AIRPORT DR</b> <b>ROCKFORD, IL 61109</b>	<b>CERTIFIED MATERIAL TEST REPORT</b>		<b>No.</b>	<b>09814</b>
	HA ORDER NO./ITEM	DATE	PAGE	OF
	300022082 1	01/02/11	1	3
	QUANTITY	INSPECTED BY		
<b>A-1 WIRE TECH</b> <b>C/O SMC ACCOUNTS PAYABLE</b> <b>1401 BURRIS ROAD</b> <b>NEWTON, NC 28658</b>	17804 LBS	HA/SMC		
	CHARGE ORDER NO.	MARK ORDER NO.		
	28815	28815		
	DESCRIPTION OF MATERIAL SHIPPED	INCOLOY ALLOY A-286 VIM-ESR HR ROD - COIL PRL ANN .3120 IN COIL COIL		


THIS IS TO CERTIFY THAT ALL REQUIRED SAMPLING INSPECTIONS AND TESTS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE ORDER AND SPECIFICATION REQUIREMENTS. THE TEST REPORT REPRESENTS THE ACTUAL ATTRIBUTES OF THE MATERIAL FURNISHED AND THE VALUES SHOWN ARE CORRECT AND TRUE. THE MATERIAL DESCRIBED BY THIS CERTIFICATE IS IN FULL COMPLIANCE WITH ALL ORDER AND INSPECTION REQUIREMENTS. WE HEREBY CERTIFY THAT THE BELOW FIGURES ARE IN ACCORDANCE WITH THE SPECIFIED CONTRACT REQUIREMENTS.

REV. 8/08

\*\*\*\*\*THIS REPORT RELATES ONLY TO THE ITEM(S) TESTED AND MAY NOT BE REPRODUCED EXCEPT IN FULL.\*\*\*\*\*

**SPECIFICATIONS:** A-1 A286 RESTRICTED FOR CUST 187, 1250, 211 REV 2-25-10\  
 SAE AMS 5731L CHEM ONLY\SAE AMS 5732J CHEM ONLY\  
 SAE AMS 5734K CHEM ONLY\SAE AMS 5737N CHEM ONLY\  
 SAE AMS 5726D CHEM ONLY\GE C50TF35-S4 AM 7 CLASS A CHEM ONLY\  
 SPS-M-118 REV L CHEM ONLY\GE S-400 (10-10-2008)\  
 GE S-1000 (3-2-2010)\  
 HEAT TREAT & STRESS RUPTURE CAPABILITY TESTING\  
 QUALITY SYSTEM CERTIFICATION: ISO 9001:2008 (ABS-QE CERT. 30125);  
 EN 10 204/DIN 50049 (TYPE 3.1)

UNS:S66286

MAY 26 2011 

**CHEMICAL ANALYSIS (WT. %)**

HEAT#	C	MN	FE	S	SI	CU	NI	CR	AL
	TI	CO	MO	P	B	PB/PPM	BI/PPM	V	
Z2664MK	0.04	0.16	56.26	0.002	0.18	0.19	24.69	14.57	0.17
	2.05	0.08	1.29	0.011	0.007	0.2	0.1	0.30	

**COUNTRY OF ORIGIN: MELTED AND MANUFACTURED IN THE USA**

**TO CONVERT PPM TO WT.%, MOVE DECIMAL POINT FOUR PLACES TO THE LEFT.**  
**MELT METHOD: VIM - ELECTROSLAG REMELTED**

A67157



RADCLIFF WIRE, INC.  
228640014

**MECHANICAL PROPERTIES**

HEAT/LOT	QUANTITY	HARDNESS	GRAIN SIZE	YIELD STRENGTH X 100 X 100	TENSILE STRENGTH X 100 X 100	ELONGATION X 100 X 100	R/A	DEC
Z2664MK 1								
ROOM TEMP-	-CAPABILITY **			1125	1648	26.6	49.2	
ROOM TEMP-	-CAPABILITY **			1024	1608	26.7	50.2	
HARDNESS -HRC	-CAPABILITY	33.9						
HARDNESS -HRC	-CAPABILITY	32.2						

HEAT TREAT #1  
 HEAT TREAT #2  
 HEAT TREAT #1  
 HEAT TREAT #2



# KAISER ALUMINUM FABRICATED PRODUCTS

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

CUSTOMER PO NUMBER: 13417		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624525323	LINE ITEM: 1	SHIP DATE: 10/22/2010		ALLOY: K540	TEMPER: F
WEIGHT SHIPPED: 28992 lbs	QUANTITY: 135 pcs.	B/L NUMBER: 7121	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO:  FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630			SOLD TO:  FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630		

Test Code: 4000

## Actual Physical Properties

Lot No.

846056 0.0

## Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
Cast/Drop									
ChemID									
846056									
11-1F2	Act.	0.05	0.09	0.00	0.08	4.8	0.07	0.00	0.01
155638									
Chemical	Min				0.05	4.5	0.05		
Limits	Max	0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
	Others	Each	0.05	Max		Total	0.15	Max	



1-07-11



A66146

## CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

Plant Serial: 12466

Kaiser Order Number: 624525323

Line Item: 1

**HUNTINGTON ALLOYS CORPORATION**  
**A Special Metals Company**

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE.

OTHER DIRECT-NOT ASSIGNABLE TO DI

HUNTINGTON, WEST VIRGINIA 25705-1771

<b>A-1 WIRE TECH</b> <b>840 AIRPORT DR</b> <b>ROCKFORD, IL 61109</b>	<b>CERTIFIED MATERIAL TEST REPORT</b>		<b>No.</b>	<b>09814</b>
	HA ORDER NO./ITEM	DATE	PAGE	OF
	300022082 1	01/02/11	1	3
	QUANTITY	INSPECTED BY		
<b>A-1 WIRE TECH</b> <b>C/O SMC ACCOUNTS PAYABLE</b> <b>1401 BURRIS ROAD</b> <b>NEWTON, NC 28658</b>	17804 LBS	HA/SMC		
	CHARGE ORDER NO.	MARK ORDER NO.		
	28815	28815		
	DESCRIPTION OF MATERIAL SHIPPED	INCOLOY ALLOY A-286 VIM-ESR HR ROD - COIL PRL ANN 3120 IN COIL COIL		

THIS IS TO CERTIFY THAT ALL REQUIRED SAMPLING INSPECTIONS AND TESTS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE ORDER AND SPECIFICATION REQUIREMENTS. THE TEST REPORT REPRESENTS THE ACTUAL ATTRIBUTES OF THE MATERIAL FURNISHED AND THE VALUES SHOWN ARE CORRECT AND TRUE. THE MATERIAL DESCRIBED BY THIS CERTIFICATE IS IN FULL COMPLIANCE WITH ALL ORDER AND INSPECTION REQUIREMENTS. WE HEREBY CERTIFY THAT THE BELOW FIGURES ARE IN ACCORDANCE WITH THE SPECIFIED CONTRACT REQUIREMENTS.

REV. 808

\*\*\*\*\*THIS REPORT RELATES ONLY TO THE ITEM(S) TESTED AND MAY NOT BE REPRODUCED EXCEPT IN FULL.\*\*\*\*\*

**SPECIFICATIONS:** A-1 A286 RESTRICTED FOR CUST 187, 1250, 211 REV 2-25-10\  
 SAE AMS 5731L CHEM ONLY\SAE AMS 5732J CHEM ONLY\  
 SAE AMS 5734K CHEM ONLY\SAE AMS 5737N CHEM ONLY\  
 SAE AMS 5726D CHEM ONLY\GE C50TF35-S4 AM 7 CLASS A CHEM ONLY\  
 SPS-M-118 REV L CHEM ONLY\GE S-400 (10-10-2008)\  
 GE S-1000 (3-2-2010)\  
 HEAT TREAT & STRESS RUPTURE CAPABILITY TESTING\  
 QUALITY SYSTEM CERTIFICATION: ISO 9001:2008 (ABS-QE CERT. 30125);  
 EN 10 204/DIN 50049 (TYPE 3.1)

UNS:566286

MAY 26 2011



**CHEMICAL ANALYSIS (WT. %)**

HEAT#	C TI	MN CO	FE MO	S P	SI B	CU PB/PPM	NI BI/PPM	CR V	AL
Z2664NK	0.04 2.05	0.16 0.08	56.26 1.29	0.002 0.011	0.18 0.007	0.19 0.2	24.69 0.1	14.57 0.30	0.17

**COUNTRY OF ORIGIN: MELTED AND MANUFACTURED IN THE USA**

**TO CONVERT PPM TO WT.%, MOVE DECIMAL POINT FOUR PLACES TO THE LEFT.**  
**MELT METHOD: VIM + ELECTROSLAG REMELTED**

A67157



RADCLIFF WIRE, INC.  
2264494.14

**MECHANICAL PROPERTIES**

HEAT/LOT	QUANTITY	HARD NESS	GRAIN SIZE	YIELD 2XPSI X 100 X 100	TENSILE PSI	YELG X	R/A X	DEC P
Z2664NK 1								
ROOM TEMP-	-CAPABILITY **			1125	1648	26.6	49.2	
ROOM TEMP-	-CAPABILITY **			1024	1600	26.7	50.2	
HARDNESS -HRC	-CAPABILITY	33.9						
HARDNESS -HRC	-CAPABILITY	32.2						

**HEAT TREAT #1**  
**HEAT TREAT #2**  
**HEAT TREAT #1**  
**HEAT TREAT #2**

# KAISER ALUMINUM FABRICATED PRODUCTS

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

CUSTOMER PO NUMBER: 13417		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624525323	LINE ITEM: 1	SHIP DATE: 10/22/2010	ALLOY: K540	TEMPER: F	
WEIGHT SHIPPED: 28992 lbs	QUANTITY: 135 pcs.	B/L NUMBER: 7121	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO:  FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630			SOLD TO:  FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630		

Test Code: 4000

## Actual Physical Properties

Lot No.

846056 0.0

## Chemical Composition, WT. % (Aluminum Remainder)

Lot Cast/Drop ChemID		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
846056 11-1F2 155638	Act.	0.05	0.09	0.00	0.08	4.8	0.07	0.00	0.01
Chemical Limits	Min Max	0.30	0.40	0.10	0.05 0.20	4.5 4.9	0.05 0.20	0.10	0.05
	Others	Each	0.05	Max		Total	0.15	Max	



1-07-11

Kaiser Aluminum Fabricated  
K846056



A66146

## CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

Plant Serial: 12466

Kaiser Order Number: 624525323

Line Item: 1



**CHERRY AEROSPACE**  
SPS Performance Division, a PCC Company



Accredited  
**Nadcap**<sup>TM</sup>

Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

1224 East Warner Avenue  
Santa Ana, CA 92707-0157

## Final Inspection & Test Report CherryMax® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: **87499746**

Rev: **1**

### Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9301BNS-5-03	4	NAS1686	3
M7885/2-5-03	D	MIL-R-7885	D2
NAS9301B-5-03	4	NAS1686	3
S2906-5-3	B	MIL-R-7885	D2
S2906-5-3	B	NAS1686	3
S2906-5-3	B	PS-CMR-3000	R



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXAerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
7	5	EA	MS20819-12J		F00033260-37076	DESIGNED METAL DBA P 14798			

  
\_\_\_\_\_  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15

# PERMASWAGE

**PERMASWAGE - Nelson Aerospace**  
A Designed Metal Connections, Inc. Company  
14800 S. Figueroa St  
Gardena, CA 90248  
Ph: 310-323-6200  
Fax: 310-217-3192

Pack Slip: 58701

\*58701\*

Sales Order: 29800

\*29800-2-1\*

Page: 1 of 1

Customer  
Packing Slip

**Ship To:**

B/E AEROSPACE CONSUMABLES MANAGEM  
9835 NW 14TH ST  
MIAMI FL 33172  
USA

Verify AES requirements prior to shipment.

**Sold To:**

B/E AEROSPACE CONSUMABLES MANAG  
10000 NW 15TH TERRACE  
MIAMI FL 33172-2756  
USA

Verify AES requirements prior to shipment.

Fax: 305-507-7192

Ship Date: 9/3/2014

Ship Via: FEDEX GROUND

F.O.B.: EX WORKS

Cust P.O.: ORLR87

Salesperson: JIM THOMPSON

PO Line	Part Number Description	Ship Qty	Rev	Lot Number
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FEDEX GRD # 0331-0149-0

RELEASE # BR500RLR87  
5,000

5,000

MS20819-12J  
SLEEVE

G F00033260-37076

Sale Order / Line / Release: 29800 / 2 / 1

Customer PO Number: ORLR87

**Certificates Required:**

Standard Certification: Yes  
Full Certifications: No

First Article Inspection: No  
Chemical/Physical: No

Material Certificate: No  
FAIR per AS9102: No

Product is compliant to DFAR 252.225-7009

5 BOXES - 10X10X10 - 30 LBS EA

AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00  
Products listed have not been exposed to mercury or mercury compounds during the manufacturing process.

**!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE-NELSON AEROSPACE SALES @ 818-686-0900 !!**

WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STANDARDS ACT ON 8/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM).

Certification of Conformance  
NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABILITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABILITY IS BASED UPON CONTRACT RIGHTS, NEGLIGENCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECEIPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH

*Ken Chant*

Manager of Quality Assurance or Designee



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	100	EA	M7885/2-4-01		88045296	CHERRY AEROSPACE SAN	11815		

  
Jason Lewis  
Senior Director, Global Quality

04/21/15

Inv # 04/21/15



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST

Order No: S0382821  
Order Date: 04/01/14  
Print Date: 02/26/15

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	KLX INC 10000 NW 15TH TERRACE MIAMI, FL 33172 USA
----------------------------	--

S H I P T O	KLX AEROSPACE SOLUTIONS KLX INC. 9835 NW 14TH ST MIAMI, FL 33172 USA
----------------------------	--

Salesperson (s):110

Purchase Order: 0XHA94

Credit Terms: NET 30  
Net 30

Ship Via: FED EX NATIONAL CL  
FOB: Origin - Collect

## Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114  
\*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
\*\*\*\*\*

ECCN: EAR99  
\*\*\*\*\*

\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
\*PREFERENCE FOR DOMESTIC SPECIALTY METALS  
\*\*\*\*\*

RELEASE# 4FTWOXHA94  
\*\*\*\*\*

Unless otherwise specified on this order, Cherry will manufacture and  
certify parts to the part number's latest revision. Latest revisions are  
shown at <https://bizpartner.cherryaerospace.com/partrevisions.htm> under  
"Part Number Revision List".  
\*\*\*\*\*

INCORRECT AND UNAVAILABLE PART NUMBERS WILL BE LINED OUT ON PO  
CHERRY AEROSPACE DOES NOT ACCEPT CLAUSE V IN REGARDS TO ISO17025- CHERRY  
IS COMPLIANT TO NADCAP REQUIREMENTS ONLY

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
2	CR3213-4-01	1600		EA	02/18/15	

**TEST REPORTS ENCLOSED DO NOT DESTROY**

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List





**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: S0382821  
Order Date: 04/01/14  
Print Date: 02/26/15

Page: 2

Sold-To: 10015341


Ship-To: 10043053

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KLX INC  
10000 NW 15TH TERRACE  
MIAMI, FL 33172  
USA

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KLX AEROSPACE SOLUTIONS  
KLX INC.  
9835 NW 14TH ST  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR3213-4-01 Customer Item: ASNA0078A401 S2906-4-1 MBBN3012L3201 M7885/2-4-01 NAS9301B-4-01 NAS9301BNS-4-01 B0207005-4-01 CAN43078B4-1				
		EZL-A63 88046825 EZL-A76 88045296	1000.0 34464.0		( ) ( )

**TEST REPORTS ENCLOSED**  
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Packing List



**CHERRY®**  
**AEROSPACE**  
 SPS Fastener Division, a PCC Company

Cherry Aerospace  
 1224 East Warner Avenue  
 Post Office Box 2157  
 Santa Ana, CA 92707-0157  
 USA



# PACKING LIST

Order No: SO382821  
 Order Date: 04/01/14  
 Print Date: 02/26/15

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	KLX INC
	10000 NW 15TH TERRACE
	MIAMI, FL 33172
	USA

S H I P T O	KLX AEROSPACE SOLUTIONS
	KLX INC.
	9835 NW 14TH ST
	MIAMI, FL 33172
	USA

Salesperson (s):110

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 BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
 AIRBUS APPROVAL# 30114  
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GOODS OF UNITED STATES ORIGIN  
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ECCN: EAR99  
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\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
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RELEASE# 4FTWOXHA94  
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Ln	Item Number	Site T Location/Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR3213-4-01	1600			

**TEST REPORTS ENCLOSED DO NOT DESTROY**

EA 02/18/15



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## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

SIM NGUYEN



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

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Page: 2



Sold-To: 10015341

Ship-To: 10043053

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KLX INC  
10000 NW 15TH TERRACE  
MIAMI, FL 33172  
USA

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KLX AEROSPACE SOLUTIONS  
KLX INC.  
9835 NW 14TH ST  
MIAMI, FL 33172  
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
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2 CR3213-4-01  
Customer Item: ASNA0078A401  
S2906-4-1  
MBBN3012L3201  
M7885/2-4-01  
NAS9301B-4-01  
NAS9301BNS-4-01  
B0207005-4-01  
CAN43078B4-1



EZL-A63 88046825  
EZL-A76 88045296

1000.0  
34464.0

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SIM NGUYEN

**CHERRY AEROSPACE**1224 East Warner Avenue  
Santa Ana, CA 92707-0157Accredited  
**Nadcap**Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab**Final Inspection & Test Report**  
**CherryMax® Rivet****An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev
CR3213-4-01	AC	PS-CMR-3000	R
** See 2nd Page for the Customer Parts			

Lot I.D. No.: **88045296**Lot Size: **34,600**MFG. Date: **February 24, 2015****ASSEMBLY DATA**

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87989190	A75288	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	88008075	A76145	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A76258	A-286 / AMS 5731, 5737	Passivate per AMS2700	None

W.O. #: 5569173

Final Lube: WAX

**QUALITY CONFORMANCE/ACCEPTANCE RESULTS**

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION			DISASSEMBLY
					125			10
	N/A	N/A	N/A	N/A	5	8	N/A	5
	C-N-M	B	C-N-M	B	C-N-M	M	B	C-N-M
RESULTS					262	249		30
					274	253		24
					270	247		27
					266	247		27
					280	248		27
						249		
C=CR N=NAS M=MIL B=BAC LOAD VALUES IN POUND						244		
						260		

PCS.ITEMSTATUSPCS.ITEMSTATUS20

EXAMINATION

PASS

20

INSTALLATION (Min and Max Grips)

PASS

**Comments:**

Blind Fastener

Tr. Rev: 1

Rev. Date: 2/26/2015

Inspector

S Nguyen

Q Code

V09



The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



## Product Certification And Testing Report

Customer:  
CHERRY AEROSPACE LLC  
ATTN: ACCTS. PAYABLE  
1224 EAST WARNER AVENUE  
P.O. BOX 2157

SANTA ANA CA 92707-0157

Date >> 7/31/2014

Customer PO No.	BWC Lot No.	Date Shipped
PO168166	26509	7/31/2014
Cust Item ID : M005.1230		

BWC Item No.  
501230832041A01

Description:  
.123" DIA. + - .0005" #4F 5056 - H32  
#4 FINISH, ALUMINUM COLD HEADING WIRE X 22"  
BLOCKWOUND 100# COILS.

Specifications:

CUST SPEC	M-5	REV. T
FED SPEC	QQ-A-430	REV. C

Chemical Limits

Test Results

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total	Aluminum Remainder	Case No.	lbs	Diameter (in)	Tensile (psi)	Yield (psi)	Peak Load (lbs)	EL %	Grain Size
5056	.30	.40	.10	.05	.20	4.5 - 5.6	.05 - .20	.10	.05	.15									
851660	.05	.08	.00	.06	4.8	.07	.00	.01				42824-1	529	0.1228	46,850.0		554.8		
852565	.03	.07	.00	.06	4.7	.07	.01	.01				42824-2	96	0.1227	46,200.0		546.3		

Total Weight: 625

AUG 11 2014



A75288



Beneke Wire Company  
851660

Beneke Wire Company

WE CERTIFY THAT SAMPLES REPRESENTING THE MATERIAL COVERED IN THIS REPORT HAVE BEEN INSPECTED AND FOUND TO MEET THE COMPOSITION LIMITS AND MECHANICAL PROPERTIES SHOWN ABOVE. ANY WARRANTY IS LIMITED TO THAT SHOWN ON BENEKE WIRE COMPANY'S STANDARD TERMS AND CONDITIONS OF SALE.

Authorized  
Signature

Shannon King, Plant Metallurgist

5540 National Turnpike

Louisville, KY 40214

Phone: (502) 367-6434

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

*Best in Class*

## **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

### **Miscellaneous Notes**

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-11. The Newark facility is AS9100C:2009 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

The products you inquired and ordered are not governed by any applicable industry standard or custom specifications. They are produced, tested and released as such. By placing an order, you acknowledge and accept the full responsibility and liability for their fitness for the intended end use or end uses.

### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLP ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

AUG 11 2014



Bareis Wire Company  
851560



A75288

Plant Serial: 32469

Kaiser Order Number: 172556284

Line Item: 1



# WireTech, Inc.

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

CHERRY AEROSPACE LLC  
1224 E. WARNER AVENUE  
SANTA ANA, CA 92705-5414  
USA

WORK ORDER  
107757

## CERTIFICATION

HEAT NO.  
10342990  
SALES ORDER / RLS  
855468 / 1  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE			
VP201301	M272.1040	422 Lbs	2	00114278	12/23/2014			
SPECIFICATION C208740-101040A A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.1035/0.1045 Specifications: AMS 2301K, AMS6322P, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A, M 272.1040 REV. T								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.39	.25	.85	.01	.006	.09	.44	.53	.21
Physical Properties								
Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source	
6	J5=53	J8=46	J10=43	S2-R1-C2	GOOD	F&S=0	Charter	
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	ksi	131.2						
Yield Strength	ksi	111.5						
% Elongation	%	5.5						
% Reduction of Area	%	60.7						
Rockwell Hardness C Scale	HRC	28						
Decarb (Total)	In	0.00						

DEC 27 2014

327  
A9019

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material out to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, Inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(AW) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9).

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

"LATEST REVISIONS OF ASTM"

Material is free of mercury, radium, or alpha contamination.

A76145

WireTech  
10342990

*Garry Goodson*

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFARS compliance, LEEDS compliance, REACH compliance, ROHS-WEEE compliance, and Conflict Materials Restrictions.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory	Address
0358-01	7388	CSSM Charter Steel Melting Division	1635 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP Charter Steel Rolling/ Processing Division	1635 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
*	*	--	Subcontracted test performed by laboratory not in Charter Steel System

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

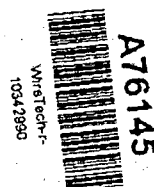
Test	Specifications	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 1/31/15. All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



DEC 27 2014





## Certificate of Conformance

Sold To: CHERRY AEROSPACE  
SANTA ANA OPERATIONS  
1224 EAST WARNER AVE  
SANTA ANA, CA 92705-5414

Date Shipped: 1/6/2015  
PO #: VP125694  
Radcliff No.: 132131  
Heat No.: QJ769/11  
Qty. Shipped: 70 lb on 5 spools

### Item Description

.006 X .011 X .056 \*\*\* A286 Stainless Steel Special shape per print AMS 5731 Rev L, AMS 5737 Rev P chem only

Melting Country: France

Producing Country: France

Notes:

Part 189.44 Rev W

### Chemical Analysis

Al: 0.16%	B: 0.007%	Bi: <0.00002%	C: 0.04%
Co: 0.09%	Cr: 14.9%	Cu: 0.11%	Fe: BAL%
Mn: 1.75%	Mo: 1.23%	Ni: 24.96%	P: 0.016%
Pb: <0.0001%	S: 0.001%	Si: 0.09%	Ti: 2.16%
V: 0.29%			

### Mechanical Properties

JAN 26 2015

Tensile: 96 KSI

We certify that the chemical analysis, physical properties, and mechanical test results are correct as contained in our records, and that they conform to customer requirements.

Material as shipped, is free from mercury contamination.

Material is DFAR compliant

*Lisa Piatek*

**Lisa Piatek**  
Certification Clerk



aperam

**CERTIFICAT DE RECEPTION 3.1-EN 10204 n° C058453/2**  
Inspection certificate - Abnahmeprüfzeugnis

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Téléphone: 03 86 21 30 00  
Télécopie: 03 86 21 31 00

Client Customer Kunde	: CENTRAL W UNION	N° Référence Our reference Unser Auftrag Nr.	: 266897/01
V/Commande Your order Ihre Bestell. Nr	: 2006874	du Of Von	: 04.17.09
Spécification Specification Vorschrift	: D.3.PRS.010.S REV.A 07/01/09		

Produit Product Erzeugnisform	: SY 286 WIRE ROD DIAM/7.5000/MM SS A286 ; MELTING ROUTE EF + VAR	Etat de livraison Condition of delivery: Lieferzustand	: SHAVED
Repère Marking Markierung	: Y(.295")	N° de fabric. Manufact. Nr Fabrik. Nr	: 4100203493
		Poids Weight Gewicht	: 3106,280 LB
		Nombre Part Nb Stückzahl	: 4 PI

COMPOSITION CHIMIQUE (1 poids) CHEMICAL COMPOSITION (1 weight) CHEMISCHE ZUSAMMENSETZUNG (1 Gewicht)										Coulée N° Heat Nr Schmelz Nr
C	Mn	Si	S	P	Ni	Cr	Mo	Cu	Co	QJ769/11
.04	1.75	.09	.001	.016	24.96	14.90	1.23	.11	.09	
V	Al	Ti	Pb	Bi	B	Fe				
.29	.16	2.16	< .0001	< .00002	.007	bal.				

**CARACTERISTIQUES MECANQUES ET AUTRES ESSAIS / TESTS RESULTS**

**ETAT DE LIVRAISON**  
CONDITION OF DELIVERY

RESISTANCE..... TENSILE STRENGTH..... : 609 MPA  
GRAIN ASTM..... SIZE ASTM..... : 6 ASTM

HYPERTREMPE 980°1H EAU+VIEILLISSEMENT 720°16H AIR  
HEAT TREATMENT OF SPECIMEN 1800°F1H WATER+1325°F 16H AIR

LIMITE ELASTIQUE. YIELD STRENGTH 0.2% : 780 MPA  
RESISTANCE..... TENSILE STRENGTH..... : 1102 MPA  
ALLONGEMENT..... ELONGATION SUR 4D..... : 29.4 %  
STRICTION..... RED. OF AREA..... : 52.0 %  
DURETE HB..... HARDNESS..... : 304 HB

**FLUAGE**

STRESS RUPTURE TEST AT 1200°F (649°C)  
UNDER 70,000 PSI (483MPA)  
DUREE DE VIE..... TIME.....

JAN 2 6 2015

68.9 H

A76258  
RADCLIFF WIRE, INC.  
QJ769/11



QUALITY CONTROL	DELARBOULAS M.	Signature Signature Unterschrift	01.05.15 Imphy plant 
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Voir page suivante

PAGE N°:

PERTH ON  
ERIN ON  
DUMAS, AR  
LANCASTER SC

613-267-3762 FAX 613-267-6617  
519-833-8632 FAX 519-833-2213  
870-382-2980 FAX 870-382-6988  
803-283-3353 FAX 803-283-6303



FOND DU LAC, WI  
UNION, IL  
PERRIS, CA

820-926-0609 FAX 920-926-0652  
815-923-2131 FAX 815-923-2126  
951-657-2105 FAX 951-943-6061

THE LEADING MANUFACTURER OF STAINLESS STEEL AND NICKEL ALLOY WIRE PRODUCTS  
EXECUTIVE OFFICES: PERTH. ON CANADA - EMAIL: [sales@centralwire.com](mailto:sales@centralwire.com)

CENTRAL WIRE  
8509 OLSON ROAD  
TEL: 815-923-2131

UNION, IL 60180-9730  
FAX: 815-923-2126

## CERTIFICATE OF CONFORMANCE

SOLD  
TO

RADCLIFF WIRE INC.  
P. O. BOX 603  
BRISTOL  
USA

CT 06011-0603

SHIP  
TO

RADCLIFF WIRE INC.  
97 RONZO ROAD  
BRISTOL,  
USA

CT 06011-0603

CUSTOMER'S PO NO.	TYPE OF CERT	CUSTOMER	ORDER NO.	WORK ORDER	DATE SHIPPED
46499	Customer	124610	1181606	4 4143737	3/26/14

SPECIFICATIONS:

ITEM DESCRIPTION			
DESCRIPTION		SPEC. CLASS	HEAT
Forming A286SF SKIN PASSED Bright .0300 200LB Plas Clean			QJ769/11
Melt mill Arcelor Mittal Country of origin France		QTY SHIP 231	044

CHEMICAL ANALYSIS						
C .040	MN 1.750	SI .090	P .0160	S .0010	CR 14.90	NI 24.960
MO 1.230	CU .110	CO .090	AL .160	TI 2.160	FE Balance	B .0070
V .290	BI < .00002	PB < .0001				

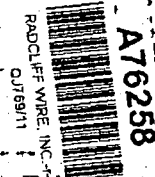
MECHANICAL PROPERTIES						
AS SHIPPED PROPERTIES:				JAN 26 2015		
TENSILE 111.000 KSI	TENSILE 112.000 KSI					
AFTER HEAT TREAT PROPERTIES:						

PASSIVATED IN PROCESS

The material as shipped is free from mercury contamination. I certify the chemical analysis and physical and mechanical test results reported above are correct as contained in the records of the company

Very truly yours,

*David Ingers*  
AUTHORIZED SIGNATURE





# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

165B Cold Springs Road  
Saukville, Wisconsin 53080  
(262) 268-2400  
1-800-437-8789  
Fax (262) 268-2570

## CHARTER STEEL TEST REPORT

Melted in USA Manufactured in USA

Wiretech Incorporated  
6440 East Canning Street  
Los Angeles, CA-90040  
Kind Attn: Cert To Contact

Cust P.O.	7325-4
Customer Part #	8740C1A060-C
Charter Sales Order	70056943
Heat #	10342990
Ship Lot #	4304649
Grade	8740 R SK FG AQ 1/4
Process	HRSA
Finish Size	1/4
Ship date	20-OCT-14

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and that it satisfies these requirements. The recording of false, fictitious and fraudulent statements or entries on this document may be punishable as a felony under federal statute.

### Test results of Heat Lot # 10342990

Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM	.39	.85	.010	.006	.250	.44	.53	.21	.09	.009	.002
%Wt	AL	N	B	TI	NB						
	.024	.0060	.0002	.002	.002						

JOMINY(HRC)	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12
	56	56	56	54	53	50	48	46	45	43	40
	J14	J16	J18	J20	J24	J28	J32				
	38	36	35	34	32	30	29				

JOMINY SAMPLE TYPE ENGLISH=C  
MACRO ETCH SAMPLE TYPE=R  
MACRO ETCH SURFACE=1

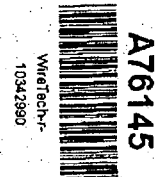
MACRO ETCH RANDOM=1

MACRO ETCH CENTER=1

AMS 2301 FREQUENCY AVERAGE=.00  
AMS 2301 SEVERITY AVERAGE=.00  
GRAIN SIZE LAB=0358-01

MIN. GRAIN SIZE=6

AMS 2301 FREQUENCY INDIVIDUAL=.00  
AMS 2301 SEVERITY INDIVIDUAL=.00  
MAX. GRAIN SIZE=8



### Test results of Rolling Lot # 1138328

REDUCTION RATIO=616:1

DEC 27 2014



Test results of Processing Lot #4304478, 4304649		Min Value	Max Value	Mean Value	TENSILE LAB = 0358-02 RA LAB = 0358-02
TENSILE (KSI)	# of Tests	83.7	83.7	83.7	
REDUCTION OF AREA (%)	1	66	66	66	
NUM DECARB=1	FREE FERRITE DECARB (Inch)=.000		FREE FERR & PARTIAL DECARB (Inch)=.000		
NUM SPHERO=1	SPHERODIZATION (%)=85.0		CP SPHERO % LAB=0358-02		

Specifications: Manufactured per Charter Steel Quality Manual Rev Date 9/12/12  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = AMS6322P/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

Charter Steel  
Saukville, WI, USA

Rem: Load1,Fax0,Mail0



Testing Laboratory

Page 1 of 2

This MTR supersedes all previously dated MTRs for this order

Janice Barnard  
Manager of Quality Assurance  
Printed Date : 10/20/2014

# KAISER ALUMINUM

FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:	
				ALY-JUMBO	
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	TEMPER:	
172556284	1	09/09/2013	K540		
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:
12946 lbs.	60 pcs.	7835		0.000 in.	0.0 in.
SHIP TO:			SOLD TO:		
BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214			BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214		

Test Code: 4000

### Actual Physical Properties

Lot No.

851660 0.0

### Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
Cast/Drop									
ChemID.									
851660									
56-2F2	Act.	0.05	0.08	0.00	0.06	4.8	0.07	0.00	0.01
183822									
Chemical	Min				0.05	4.5	0.05		
Limits	Max	0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
	Others	Each	0.05	Max		Total	0.15	Max	

AUG 11 2014



A75288

Plant Serial: 32469

Kaiser Order Number: 172556284

Line Item: 1



**CHERRY** AEROSPACE  
SPS Aerospace Division, a PCC Company



Accredited  
**Nadcap**™

Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

1224 East Warner Avenue  
Santa Ana, CA 92707-0157

An ISO9001 and AS9100 registered company. OASIS #6111041606

## Final Inspection & Test Report CherryMax® Rivet

Lot I.D. No.: 88045296

Rev: 1

### Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
ASNA0078A401	P	NAS1686	4
S2906-4-1	B	MIL-R-7885	D2
MBBN3012L3201	01/06	MBBN3015	12.2003
M7885/2-4-01	D	MIL-R-7885	D2
NAS9301B-4-01	6	NAS1686	4
NAS9301BNS-4-01	6	NAS1686	4
B0207005-4-01	E	MIL-R-7885	D2
CAN43078B4-1	8	NAS1686	4

Parts delivered in accordance with the standard amendments as agreed by Cherry/EADS.



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO28189**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	100	EA	CR3212-4-05		87694584	CHERRY AEROSPACE SAN	11815		

  
04/21/15  
Jason Lewis  
Senior Director, Global Quality

Inv # 04/21/15



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



# PACKING LIST

Order No: S0365430  
Order Date: 01/18/12  
Print Date: 08/08/12

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FBT85

Credit Terms: NET 30  
Net 30

Ship Via: FED EX NATIONAL CL  
FOB: Origin - Collect

## Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114  
\*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
\*\*\*\*\*



**TEST REPORTS ENCLOSED**

ECCN: EAR99  
\*\*\*\*\*

**DO NOT DESTROY\*\***

\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
\*PREFERENCE FOR DOMESTIC SPECIALTY METALS  
\*\*\*\*\*

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
1	CR3212PR-4-05 *CR3212-4-05 *NAS9302BNS-4-05 *NAS9302B-4-05 *ASNA0077A405 *M7885/3-4-05 *B0207003-4-05 	1600			EA	09/27/12	
		C0605	87694584	33326.0		( )	

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

SIM NGUYEN



**CHERRY AEROSPACE**

SPS Fastener Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab**Final Inspection & Test Report**  
**CherryMax® Rivet****An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	87694584
CR3212PR-4-05	AB	PS-CMR-3000	R	Lot Size:	35,000
CR3212-4-05	AB	PS-CMR-3000	R	MFG. Date:	August 08, 2012
** See 2nd Page for the Customer Parts					

**ASSEMBLY DATA**

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87673379	A69663	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87641269	A70432	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	Bare or PAR-90 Only
Collar	0	A71030	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 5487287

Final Lube: None

**QUALITY CONFORMANCE/ACCEPTANCE RESULTS**

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION		DISASSEMBLY
	664		285		125		10
	8	N/A	8	N/A	8	N/A	5
	C-N-M	B	C-N-M	B	C-N-M	B	C-N-M
RESULTS	912		379		185		51
	814		363		242		43
	799		383		194		48
	815		380		217		20
	978		370		199		52
C=CR N=NAS	982		357		223		
M=MIL B=BAC	836		365		198		
LOAD VALUES	901		370		195		
IN POUND							

PCSITEMSTATUSPCSITEMSTATUS20

EXAMINATION

PASS

20

INSTALLATION (Min and Max Grips)

PASS

**Comments:**

Blind Fastener

Tr. Rev: -  
Rev. Date: 8/8/2012Q Code  
V09Inspector  
J Segura

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

## KAISER ALUMINUM

SHIP TO:

CHERRY AEROSPACE LLC

## VMI / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414

SOLD TO:

CHERRY AEROSPACE LLC

VMI / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414

		ULTIMATE		YIELD		% ELONGATION	
LOT NUMBER	# OF TESTS	STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K848366	2	48.6	48.7				

[illegible]

A59663

FEB 27 2012



CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	5056		0.30		0.40		0.10	0.05	0.20	4.50	5.60	0.05	0.20	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.10										
ALUMINUM REMAINDER															

# **KAISER**

## **ALUMINUM**

### **FABRICATED PRODUCTS**

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

## **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

### **Miscellaneous Notes**

Made in USA

Product produced from K540 meets the requirements of aluminum alloy 5056

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-11. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

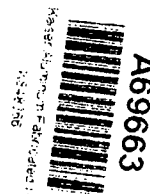
### **CERTIFICATION**

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

FEB 27 2012



Plant Serial: 21543  
Kaiser Order Number: 624537784  
Line Item: 1



**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

**CHERRY AEROSPACE LLC**  
1224 E. WARNER AVENUE  
SANTA ANA, CA 92705-5414  
USA

# CERTIFICATION

WORK ORDER  
**090908**

HEAT NO.  
**10166390**  
SALES ORDER / RLS  
**844311 / 1**  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. <b>VP201201</b>	CUSTOMER PART <b>M272.1040</b>	QUANTITY <b>6,253 Lbs</b>	CARRIERS <b>8</b>	LADING NO <b>00096943</b>	SHIPMENT DATE <b>05/08/2012</b>			
SPECIFICATION <b>C208740-101040A</b> <b>A-8740, AQ, SKFG, CHQ WIRE, SEAM &amp; DECARB FREE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating,</b> <b>Size:0.1035/0.1045 Specifications: AMS 2301K, AMS6322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A,</b> <b>M 272.1040 REV. R</b>								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C .39	Si .25	Mn .84	P .01	S .01	Cu .09	Ni .43	Cr .54	Mo .27
Physical Properties								
Grain Size 6 J5=55	Jominy 1 J8=49	Jominy 2 J10=46	Jominy 3 S2-R1-C2	Inclusions Macro GOOD	Cleanliness F&S=0	Mill Source Charter		
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS					Results		
Tensile Strength	KSI					133.4		
Yield Strength	KSI					113.4		
% Elongation	%					8.5		
% Reduction of Area	%					68.8		
Rockwell Hardness C Scale	HRC					28		
Decarb (Total)	In					0.00		
MAY 12 2012								
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, &amp; 225.003(9)</p> <p>"LATEST REVISIONS OF ASTM"</p> <p>Material is free of mercury, radium, or alpha contamination.</p>								



A70432

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

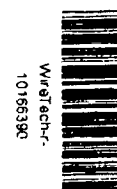
Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



MAY 12 2012



W/tech-  
10163390

A70432

# Certificate of Analysis

Radcliff Wire Inc. 97 Ronzo Rd., P.O. Box 603, Bristol, CT 06010

Date Shipped: 6/27/2012

PO #: VP125694

Qty. Shipped: 63 LBS--7-BLACK  
MIG SPOOLS

Radcliff No.: 124673

Heat No.: QL073

Customer: CHERRY AEROSPACE  
SANTA ANA OPERATIONS  
1224 EAST WARNER AVE  
SANTA ANA, CA 92705-5414

Country of Origin: FRANCE

Original Mill Source: FRANCE

Size: .006 X .011 X .056 \*\*\*

Material: A286 Stainless Steel

Description: SPECIAL SHAPE

Specification: AMS 5731 REV L, AMS 5737 REV P  
CHEM ONLY

## Chemical Properties

Al: 0.2%	B: 0.007%	Bi: <0.00002%	C: 0.04%	Co: 0.08%
Cr: 14.79%	Cu: 0.07%	Fe: BAL%	Mn: 1.7%	Mo: 1.25%
Ni: 24.52%	P: 0.015%	Pb: <0.0001%	S: 0.001%	Si: 0.05%
Ti: 2.29%	V: 0.3%			

## Notes:

DFAR COMPLIANT  
CONSIGNMENT ORDER  
PART# M189.44 REV W  
NET WGT 63 LBS

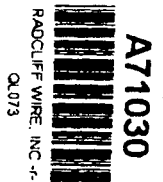
Tensile: 101 KSI

Rockwell:

JUL 26 2012



Certs/Material



  
Lisa Platek

Certification Clerk

The material as shipped is free from mercury contamination

ArcelorMittal

**CERTIFICAT DE RECEPTION 3.1-EN 10204 n° C061485/1**  
 Inspection certificate - Abnahmeprüfzeugnis

Usine - Works - Werk  
 Stainless & Nickel Alloys  
 58160 IMPHY FRANCE  
 Téléphone: 03 86 21 30 00  
 Télécopie: 03 86 21 31 00

Client Customer Kunde	CENTRAL W UNION	du Of Von	11.23.10
V/Commande Your order Ihre Bestell. Nr.	2009005		
Spécification Specification Vorschrift	D.3.PRS.010.S RE.A 07/01/09		
N/Reference Our reference Unser Auftrag Nr.		292457.01	

Produit Product Erzeugnisform	SY 286 WIRE ROD DIAM/5.5000/MM SS A286 : MELTING ROUTE EF + VAR	Etat de livraison Condition of delivery: Lieferzustand	SOFT ANN/PICKL.
		N° de fabric. Manufact. Nr. Fabrik. Nr.	4100233762
		Poids Weight Gewicht	3591.290 LB
		Nombre Part No. Stückzahl	4 PI
Repère Marking Markierung	Ø(.217")		

COMPOSITION CHIMIQUE (X poids) CHEMICAL COMPOSITION (X weight) CHEMISCHE ZUSAMMENSETZUNG (X Gewichte)										Coulée N° Heat Nr. Schmelz Nr	
C	Mn	P	S	Si	Al	Fe	Mo	Ca	Co	QL073	
.04	1.70	.05	.001	.015	24.52	14.79	1.25	.07	.08		
.30	.20	2.29	< .0001	< .00002	.007	bal.					

**CARACTERISTIQUES MECANQUES ET AUTRES ESSAIS / TESTS RESULTS**

**ETAT DE LIVRAISON**  
 CONDITION OF DELIVERY

RESISTANCE..... TENSILE STRENGTH..... : 617 MPA **89,488 psi**  
 GRAIN ASTM..... SIZE ASTM..... : 6 ASTM

**HYPERTREMPE 980°1H EAU+VIEILLISSEMENT 720°16H AIR**  
 HEAT TREATMENT OF SPECIMEN 1800°F1H WATER+1325°F 16H AIR

LIMITE ELASTIQUE..... YIELD STRENGTH 0.2%..... : 691 MPA  
 RESISTANCE..... TENSILE STRENGTH..... : 1078 MPA  
 ALLONGEMENT..... ELONGATION SUR 40..... : 25.0 %  
 STRICTION..... RED. OF AREA..... : 56.0 %  
 DURETE HB..... HARDNESS..... : 292 HB

**FLUAGE**  
 STRESS RUPTURE TEST AT 1200°F (649°C)  
 UNDER 70,000 PSI (4830 MPa)  
 DUREE DE VIE..... TIME..... : 136.7 H

**JUL 2 6 2012**



**A71030**

QUALITY CONTROL	DUPUIS G.	Signature Signature Unterschrift	11.29.10 Imphy plant <i>[Signature]</i>
-----------------	-----------	--	---

Voir page suivante.

PAGE N°: 1

PERTH, ON  
ERIN, ON  
DUMAS, AR  
LANCASTER, SC

613-267-3782 FAX 613-267-5817  
516-833-9832 FAX 519-833-2213  
870-382-2980 FAX 970-382-6988  
803-293-3353 FAX 803-283-6303



FOND DU LAC, WI 920-928-0609 FAX 920-928-0652  
UNION, IL 815-923-2131 FAX 815-923-2126  
PERRIS, CA 951-657-2105 FAX 951-943-6061

THE LEADING MANUFACTURER OF STAINLESS STEEL AND NICKEL ALLOY WIRE PRODUCTS  
EXECUTIVE OFFICES: PERTH, ON CANADA - EMAIL: [sales@centralwire.com](mailto:sales@centralwire.com)

CENTRAL WIRE  
8509 OLSON ROAD  
TEL: 815-923-2131

UNION, IL 60180-9730  
FAX: 815-923-2126

## CERTIFICATE OF CONFORMANCE

SOLD  
TO

RADCLIFF WIRE INC.  
P. O. BOX 603  
BRISTOL

CT 06011-0603

USA

SHIP  
TO

RADCLIFF WIRE INC  
97 RONZO ROAD  
BRISTOL

CT 06011-0603

USA

CUSTOMER'S PO NO.	TYPE OF CERT	CUSTOMER	ORDER NO.	WORK ORDER	DATE SHIPPED
45088	Customer	124610	1172917	2 4133115	4/30/12

### SPECIFICATIONS:

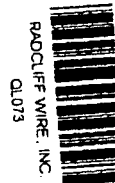
ITEM DESCRIPTION			SPEC. CLASS	HEAT
DESCRIPTION				
Forming A286SF	Melt mill			QL073
SKIN PASSED Bright	Arcelor Mittal			
.0300 200LB. Plas	Country of origin		QTY SHIP	
Clean	France		367	044

CHEMICAL ANALYSIS						
C	MN	SI	P	S	CR	NI
.04	1.70	.05	.015	.001	14.79	24.52
MO	CU	CO	AL	TI	FE	B
1.25	.07	.08	.20	2.29	Balance	.007
V	BI	PB				
.30	< .00002	< .0001				

MECHANICAL PROPERTIES							
AS SHIPPED PROPERTIES:							
TENSILE	TENSILE						
117.000	122.000						
KSI MIN	KSI MAX						
AFTER HEAT TREAT PROPERTIES:							

"PASSIVATED IN PROCESS"

JUL 26 2012



A71030

The material as shipped is free from mercury contamination. I certify the chemical analysis and physical and mechanical test results reported above are correct as contained in the records of the company.

Very truly yours,

*David M. [Signature]*  
AUTHORIZED SIGNATURE





# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL-

1658 Cold Springs Road  
Saukville, Wisconsin 53080  
(262) 268-2400  
1-800-437-8789  
FAX (262) 268-2570

## CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Wiretech Incorporated  
6440 East Canning Street  
Attn: Andre Stephan  
Los Angeles, CA-90040

Cust P.O.	6798-1
Customer Part #	40C1A060-C-AQ PRACTICE
Charter Sales Order	70029601
Heat #	10166390
Ship Lot #	4127375
Grade	8740 R SK FG AQ 17/64
Process	DFSAR
Finish Size	0.254

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

### Test Results of Heat Lot# 10166390

Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM %Wt	.39	.84	.010	.010	.25	.43	.54	.27	.09	.008	.001
	AL	N	B	TI	NB						
	.032	.0080	.0001	.000	.002						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	49	48	46	43
	JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32				
	41	39	38	37	35	33	31				

JOMINY SAMPLE TYPE ENGLISH = C  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00  
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00  
CHEM. DEVIATION EXT.-GREEN =

### Test Results of Rolling Lot# 1060499

REDUCTION RATIO = 544:1

### Test Results of Processing Lot# 4125509, 4127375

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	3.0	94.6	99.2	97.0	TENSILE LAB = 0358-02
REDUCTION OF AREA	3	64	68	66	RA LAB = 0358-02

NUM DECARB = 4 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .001  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 4 SPHERODIZATION = 81.3

Specifications: Manufactured per Charter Steel Quality Manual Rev 8,08-01-09  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

MAY 1 2 2012



Charter Steel  
Saukville, WI, USA



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

Janice Barnard  
Manager of Quality Assurance  
03/21/2012

Rem: Load1,Fax0,Mail0

# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER: FLO-1257		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624537784	LINE ITEM: 1	SHIP DATE: 01/13/2012	ALLOY: K540	TEMPER: F	
WEIGHT SHIPPED: 38844 lbs.	QUANTITY: 180 pcs.	B/L NUMBER: 2441	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO:  FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630			SOLD TO:  FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630		

Test Code: 4000

### Actual Physical Properties

Lot No.

848366 0.0

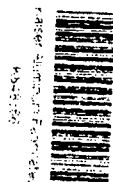
### Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
Cast/Drop									
ChemID									
848366									
29-2F2	Act.	0.04	0.10	0.00	0.06	4.7	0.08	0.00	0.01
167488									
Chemical	Min				0.05	4.5	0.05		
Limits	Max	0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
	Others	Each	0.05	Max		Total	0.15	Max	

### Specifications

QQA-430 REV C

FEB 27 2012



A69663

Plant Serial: 21543  
Kaiser Order Number: 624537784  
Line Item: 1



**CHERRY AEROSPACE**  
SRS Fastener Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157



Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

## Final Inspection & Test Report CherryMax® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: 87694584

Rev: -

### Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9302BNS-4-05	5	NAS1686	3
ASNA0077A405	M	MIL-R-7885	D2
ASNA0077A405	M	NAS1686	3
ASNA0077A405	M	PS-CMR-3000	R
B0207003-4-05	B	MIL-R-7885	D2
B0207003-4-05	B	NAS1686	3
B0207003-4-05	B	PS-CMR-3000	R
M7885/3-4-05	C2	MIL-R-7885	D2
NAS9302B-4-05	5	NAS1686	3

Parts delivered in accordance with the standard amendments as agreed by Cherry/EADS.